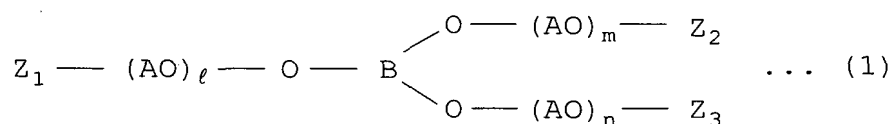


WHAT IS CLAIMED IS:

1. A lithium secondary battery having a positive electrode and a negative electrode which reversibly intercalate and deintercalate lithium and an electrolyte containing an ion conductive material and an electrolytic salt, where said ion conductive material contains a boron-containing compound represented by the following formula (1):

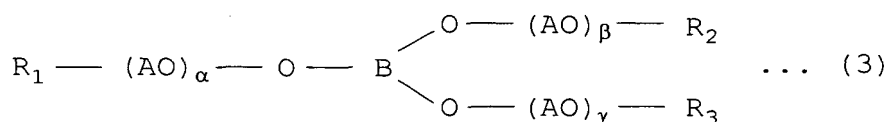
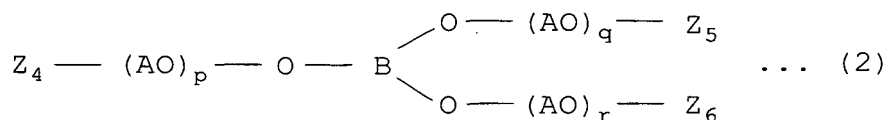


wherein B represents a boron atom;  $Z_1$ ,  $Z_2$  and  $Z_3$  each represent an organic group having an acryloyl group or a methacryloyl group or a hydrocarbon group of 1-10 carbon atoms, with the proviso that one or two of  $Z_1$ ,  $Z_2$  and  $Z_3$  are the organic groups having an acryloyl group or a methacryloyl group; AO represents an oxyalkylene group of 1-6 carbon atoms and comprises one or two or more of the oxyalkylene groups; and  $\ell$ , m and n each represent an average degree of polymerization of the oxyalkylene group and is more than 0 and less than 4.

2. A lithium secondary battery according to claim 1, wherein the electrolyte contains a polymer obtained by polymerizing the boron-containing compound represented by the formula (1).

3. A lithium secondary battery having a positive

electrode and a negative electrode which reversibly intercalate and deintercalate lithium and an electrolyte containing an ion conductive material and an electrolytic salt, where the ion conductive material comprises a polymerizable composition which contains a boron-containing compound represented by the following formula (2) and a boron-containing compound represented by the following formula (3) and which has a molar ratio of the compound of the formula (2) and the compound of the formula (3) [(molar number of the compound of the formula (3))/(molar number of the compound of the formula (2))] of 0.1-4:



wherein B represents a boron atom;  $Z_4$ ,  $Z_5$  and  $Z_6$  each represent an organic group having an acryloyl group or a methacryloyl group or a hydrocarbon group of 1-10 carbon atoms, with the proviso that at least one of  $Z_4$ ,  $Z_5$  and  $Z_6$  is said organic group having an acryloyl group or a methacryloyl group;  $R_1$ ,  $R_2$  and  $R_3$  each represent a hydrocarbon group of 1-10 carbon atoms; AO represents an oxyalkylene group of 1-6 carbon atoms and comprises one or two or more of the oxyalkylene groups; and p, q,

$r$ ,  $\alpha$ ,  $\beta$  and  $\gamma$  each represent an average degree of polymerization of the oxyalkylene group and is more than 0 and less than 4.

4. A lithium secondary battery according to claim 3, wherein the electrolyte contains a polymer obtained by polymerizing the polymerizable composition.

5. A lithium secondary battery according to claim 1, wherein the electrolytic salt is at least one of  $\text{LiPF}_6$ ,  $\text{LiN}(\text{CF}_3\text{SO}_2)_2$ ,  $\text{LiClO}_4$ ,  $\text{LiBF}_4$ ,  $\text{LiAsF}_6$ ,  $\text{LiI}$ ,  $\text{LiBr}$ ,  $\text{LiSCN}$ ,  $\text{Li}_2\text{B}_{10}\text{Cl}_{10}$  and  $\text{LiCF}_3\text{CO}_2$ .

6. A lithium secondary battery according to claim 2, wherein the electrolytic salt is at least one of  $\text{LiPF}_6$ ,  $\text{LiN}(\text{CF}_3\text{SO}_2)_2$ ,  $\text{LiClO}_4$ ,  $\text{LiBF}_4$ ,  $\text{LiAsF}_6$ ,  $\text{LiI}$ ,  $\text{LiBr}$ ,  $\text{LiSCN}$ ,  $\text{Li}_2\text{B}_{10}\text{Cl}_{10}$  and  $\text{LiCF}_3\text{CO}_2$ .

7. A lithium secondary battery according to claim 3, wherein the electrolytic salt is at least one of  $\text{LiPF}_6$ ,  $\text{LiN}(\text{CF}_3\text{SO}_2)_2$ ,  $\text{LiClO}_4$ ,  $\text{LiBF}_4$ ,  $\text{LiAsF}_6$ ,  $\text{LiI}$ ,  $\text{LiBr}$ ,  $\text{LiSCN}$ ,  $\text{Li}_2\text{B}_{10}\text{Cl}_{10}$  and  $\text{LiCF}_3\text{CO}_2$ .